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Patentanmeldung Nr. | Patent application No. | Demande de brevet n°

99310559.2

Der Präsident des Europäischen Patentamts;
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets
p.o.

I.L.C. HATTEN-HECKMAN

DEN HAAG, DEN
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Blatt 2 der Bescheinigung
Sheet 2 of the certificate
Page 2 de l'attestation

Anmeldung Nr.:
Application no.: 99310559.2
Demande n°:

Anmeldetag:
Date of filing: 23/12/99
Date de dépôt:

Anmelder:
Applicant(s):
Demandeur(s):

Access Devices Limited
London W14 8TS
UNITED KINGDOM

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Title of the invention:
Titre de l'invention:

TV receiving and internet browsing apparatus

In Anspruch genommene Priorität(en) / Priority(ies) claimed / Priorité(s) revendiquée(s)

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Etats contractants désignés lors du depôt:

Bemerkungen:
Remarks:
Remarques:

The application has been transferred from the original applicant
Two Way TV Limited, London W14 8TS, Great Britain, to
Access Devices Limited, London W14 8TS,
with effect from 24.10.2000.

The invention relates to television receiving and Internet browsing apparatus.

Conventional TV receiving apparatus simply receives broadcast TV and teletext services. Recently, interactive TV, which can be implemented in both analogue and digital form, has been developed to allow remote users to play games, possibly linked with a displayed TV channel, and to carry out other tasks such as on-line shopping. To that end, a control system is provided, usually in a set-top box (STB), to extract from broadcast signals the required text or graphics overlay information which is then displayed under the control of the user and to transmit information back to a central location.

Attempts have been made to enable such television receiving apparatus to provide access to the Internet but this has not happened to any significant extent due to the different display requirements of TV displays as compared with computer monitors, and due to the highly developed PC Internet browser technology.

An important aspect of the Internet is the provision of advertisements to users. Conventionally, with PC-based browsers, an advertisement may be presented to a user as part of a displayed web page. However, as soon as a user selects a different web page, the advertisement will disappear. This significantly reduces the impact of any one advertisement. NetZero based in the USA is one company which has recently introduced a ZeroPort feature for use with PC browsers which enables advertisements to be targeted to users.

In accordance with one aspect of the present invention, a television receiving apparatus comprises:

a) a receiver for receiving broadcast TV signals;

b) a TV display; and,

c) a control system for controlling the display of received TV signals on the TV display,

the control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to adapt and display the received web pages in a first region of the TV display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the TV display independently of the web page(s) displayed in the first region.

We have realized that a key to developing the use of TV receivers with the Internet is the ability to provide advertisers with guarantees that their advertisements will be viewed for known periods while enabling them to target the very wide TV audience as compared with the PC audience. We also realized that this could be achieved by making use of the control system already being used and developed for interactive TV, although dedicated browser control systems could also be used. The control system will also convert the Internet format signals to TV display format.

Thus, the invention provides a new type of TV control system which includes an Internet browser and which divides the display into two (or more) display regions. The first region is used to display user selected web pages in the usual way while the second region displays information which is not under control of the user. This enables the second region to be used to display advertisements or other information for much longer than the time for which any particular web page is being viewed. Advertisers can then target particular advertisements for any length of time while the apparatus is being operated and achieve a much better exposure.

The information disclosed in the second region can be selected independently of the receiving apparatus or alternatively could be selected in accordance with previous usage of the Internet. Thus, if the server detects that the user of the apparatus accesses particular types of web

page then the information it causes to be displayed in the second region can be related to that type.

There are a number of different ways in which the invention can be implemented. In one approach, the information disclosed in the second region corresponds to a second web page.

Thus, in accordance with a second aspect of the present invention, we provide Internet browsing apparatus comprising a display; and a control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to display the received web pages in a first region of the display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the display independently of the web page(s) displayed in the first region, wherein the information disclosed in the second region corresponds to a second web page.

The browser thus needs to be adapted to control the display of two web pages simultaneously. In this case, the URL of the second web page may be generated by the browser. Alternatively, the server may be adapted to generate the URL of the second web page. In either case, the content of the information in the second web page can be varied either by the server loading different information into the second web page at a common URL or changing the URL to point to an alternative "second web page".

Preferably, the second region comprises a banner located in a lower region of the display. Furthermore, the banner may include browser control icons. This approach takes advantage of the existing division between the browser control region of the display and the region dedicated to the display of web pages and provides an extra function for the browser banner.

In another approach, the information displayed in the second region may be transmitted by the server as a second

HTML frame appended to a first HTML frame defining a web page selected by the user.

Thus, in accordance with a third aspect of the present invention, we provide Internet browsing apparatus comprising a display; and a control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to display the received web pages in a first region of the display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the display independently of the web page(s) displayed in the first region, wherein the information displayed in the second region is transmitted by the server as a second HTML frame appended to a first HTML frame defining a web page selected by the user.

In this case, the server provides a single output which is divided up into two HTML frames.

The invention also relates to an Internet access system comprising TV receiving apparatus according to the first aspect of the invention or Internet browsing apparatus according to the second or third aspects of the invention; and an Internet server which can be selectively coupled with the said apparatus.

Some examples of apparatus and systems according to the present invention will now be described with reference to the accompanying drawings, in which:-

Figure 1 is a block diagram of an Internet access system;

Figure 2 is a block diagram of part of the set-top box shown in Figure 1; and,

Figure 3 is a schematic view of a typical display on the monitor of Figure 1.

Figure 1 illustrates part of an Internet access system. The system comprises an Internet service provider (ISP) A who provides apparatus including a server 1 for

connection to the Internet 2, a store 3 connected to the server 1, and a modem 4 connected to the server 1 for transmitting signals generated by the server over a public switched telephone network (PSTN). The system also comprises a large number of remote TV receiving apparatus, one of which B is shown. Each set of apparatus B comprises a television screen 5 coupled via a STB 6 to a TV signal receiver 7. The STB 6 is controlled from a handset 8 which generates infrared signals 9 in a conventional manner.

Each of the apparatus B has a generally conventional form and so will not be described in detail. However, as can be seen in Figure 2, the STB 6 at least includes a CPU 10, ROM 11, RAM 12 and an infrared input device 13 for receiving the signals 9, all connected to an address/data bus 14. The STB 6 also includes a modem 15 for transmitting signals across the PSTN (not shown) to the modem 4 connected to the server 1.

The software stored in the ROM 11 will enable the CPU 10 to control the TV channel to be displayed on the TV 5 in response to user input and also to provide other information such as an electronic program guide, text and graphics relating to games and the like as supplied from a central computer system (not shown). An example is described in more detail in EP-A-0873772.

When a user wishes to access the Internet, he issues suitable control signals from the handset 8 to the STB 6. These signals are received by the input device 13 where they are decoded and fed to the CPU 10. The CPU 10 then causes the modem 15 to dial up the ISP A so that a connection can be made with the server 1.

The ROM 11 includes Internet browser software to which the CPU 10 responds to display a home page on the TV 5. The browser makes use of hard coded HTML in the ROM 11 to divide the display into separate regions as shown schematically in Figure 3. These include a main or first region 20 within which web pages corresponding to user selected URLs will appear and one, or in this case two,

second regions 21,22 above and below the region 20 respectively in the form of banners.

The upper region 21 includes certain conventional icons such as "previous page", "next page" and "home" icons 23-25 while the region 22 is dedicated to displaying advertisements as will be described below.

The region 22 includes certain fixed graphics 26,27 and a small window 28 within which advertisements will appear. Initially, when the browser has been activated but before it has logged on to the Internet, the region 28 will be caused to display text or graphics information stored in the ROM 11.

Once the browser has successfully logged on to the Internet, the display within the window 28 will be refreshed. There are two main ways in which this can be achieved.

In the first approach, the browser includes a special URL in the ROM 11 which it transmits to the server 1 independently of any URL selected by the user. The server 1 accesses the page indicated by the special URL and this is transmitted back to the CPU 10 and used to constitute the information within the window 28. Separately and independently, the user can selected URLs in the usual way and the appropriate web pages are accessed by the server 1, returned to the remote user B via the modem 4 and modem 15 and displayed within the region 20.

Periodically, the browser will resend the special URL so as to update the content of the window 28. This can be done whenever the main output is idle.

In an alternative approach, the server 1 can append the special advertisement data as a second frame to a first HTML frame corresponding to the web page selected by the user. In this case, any web page requested by a user is displayed towards the top of the TV display 5 while the advertisement is displayed in the bottom part.

If the user wishes to respond to the advertisement in the window 28, he can click either on the window 28 or on

the "go shopping" icon 27 which will cause the server 1 to access a corresponding URL and retrieve that web page in a conventional manner. That web page will then be displayed in the main region 20. The retrieved web page could be the advertiser's home page or a commercial ordering page.

The content of the advertisements is most easily determined by the server 1 which can simply change the file stored at a particular URL in order to change the advertisement. The browser then always uses the same URL for the display 28. Another way is to control the advertisements using CGI scripting, asking the server 1 for the next advertisement URL every time the advertisement needs a refresh.

The advertisement "page" can be refreshed in one of two ways:

- One is to use JavaScript to talk to the server. The server will use CGI or Java to pass down the version of advert required, which is compared to the current advert within the box. If a new advert is needed, the "advert" frame is redirected using the location object in JavaScript.
- Another way is to use HTTP redirect to relocate the "advert" frame to a new advert URL.

The server 1 is tied into a database 3 containing a diary of each advert: version, when they become live and for how long. Also, information can be stored for individual users, which adverts are best for them depending on the type of content they look for when browsing the web. This information can be calculated and maintained either by a "Cookie Collection" or via a data mining process.

When the browser requests a refresh, passing the version of advert back to the server, this information is compared and the browser is redirected to a new advert URL, if need be.

JavaScript keeps a timer which will regularly update the server on the advert it is displaying and for how long.

Once it is time to update to a new advert, the server replies with a redirection, telling the browsing the URL of the new advert and version information.

The total time of an advert is written back into the database for each individual set-top box and the grand total of time for that version of advert.

The signals received by the modem 15 will typically be formatted for use with a conventional PC monitor display based on an area of 800x600 square pixels. A conventional TV display, however, is defined by 600x400 rectangular pixels and so the CPU 10 will carry out a conventional modification algorithm to convert the incoming signals to a compatible TV format, i.e. with changes in pixel size, pixel screen and colour.

CLAIMS

1. A TV receiving apparatus comprising:

a) a receiver for receiving broadcast TV signals;

b) a TV display; and,

c) a control system for controlling the display of received TV signals on the TV display,

the control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to adapt and display the received web pages in a first region of the TV display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the TV display independently of the web page(s) displayed in the first region.

2. Apparatus according to claim 1, wherein the control device is provided in a set-top box.

3. Apparatus according to claim 1 or claim 2, wherein the information displayed in the second region corresponds to a second web page.

4. Internet browsing apparatus comprising a display; and

a control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to display the received web pages in a first region of the display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the display independently of the web page(s) displayed in the first region, wherein the information disclosed in the second region corresponds to a second web page.

5. Apparatus according to claim 4 or claim 5, wherein the browser is adapted to generate a URL corresponding to the second web page.

6. Apparatus according to claim 1 or claim 2, wherein the information displayed in the second region is defined by a

second HTML frame appended to a first HTML frame defining a web page selected by the user.

7. Internet browsing apparatus comprising a display; and a control system including an Internet browser connectable to an Internet server to supply URLs, selected by a user, to the server, to receive corresponding web pages and to display the received web pages in a first region of the display, the control system being adapted to cause information different from the selected web page and received from the server to be displayed in a second region of the display independently of the web page(s) displayed in the first region, wherein the information displayed in the second region is transmitted by the server as a second HTML frame appended to a first HTML frame defining a web page selected by the user.

8. Apparatus according to any of the preceding claims, wherein the second region is defined by a banner in another section of the display.

9. Apparatus according to claim 8, wherein the banner is includes one or more browser control icons.

10. An Internet access system comprising apparatus according to any of the preceding claims; and an Internet server which can be selectively coupled with the said apparatus.

11. A system according to claim 10, when dependent on claim 4 or claim 5, wherein the Internet server and the apparatus cooperate such that the browser generates a special URL to obtain the information to be displayed in the second region.

12. A system according to claim 11, wherein the Internet server is adapted to update the content of the web page addressed by the special URL.

13. A system according to claim 10, when dependent on claim 6 or claim 7, wherein the Internet server appends a second frame to data defined by the web page selected by the user, for displaying in the second region.

14. A system according to any of claims 10 to 13, wherein the information displayed in the second region is regularly updated by the Internet server.

15. A system according to claim 13, wherein the Internet server is adapted to update the said information each time the information is to be refreshed to the apparatus.

16. A system according to claim 14 or claim 15, wherein the Internet server is adapted to monitor the URLs requested by a user and to update the information to be displayed in the second region with related data.

17. A system according to any of claims 10 to 16, wherein the information displayed in the second region is an advertisement.

ABSTRACT

TV RECEIVING AND INTERNET BROWSING APPARATUS

TV receiving apparatus comprises a receiver (7) for receiving broadcast TV signals, a TV display (5), and a control system (6) for controlling the display of received TV signals on the TV display 5. The control system (6) includes an Internet browser (11) connectable to an Internet server (1) to supply URLs, selected by a user, to the server, to receive corresponding web pages, and to adapt and display the received web pages in a first region (20) of the TV display. The control system (6) is also adapted to cause information different from the selected web page and received from the server (1) to be displayed in a second region (22) of the TV display independently of the web page(s) displayed in the first region (20).

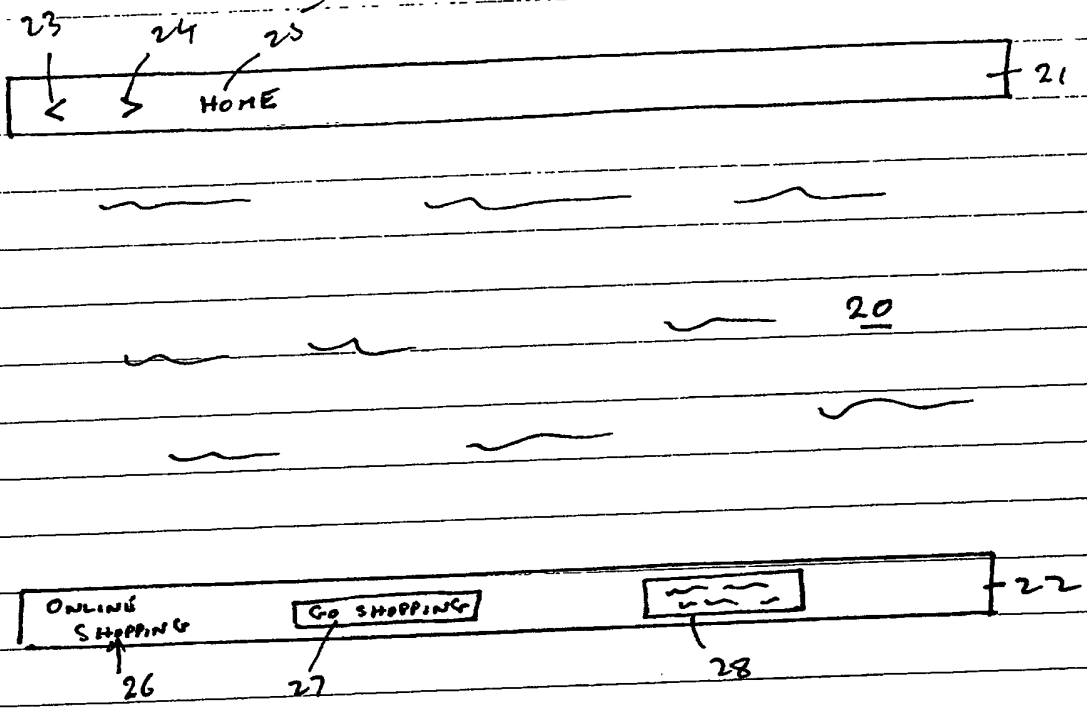

FIG 3

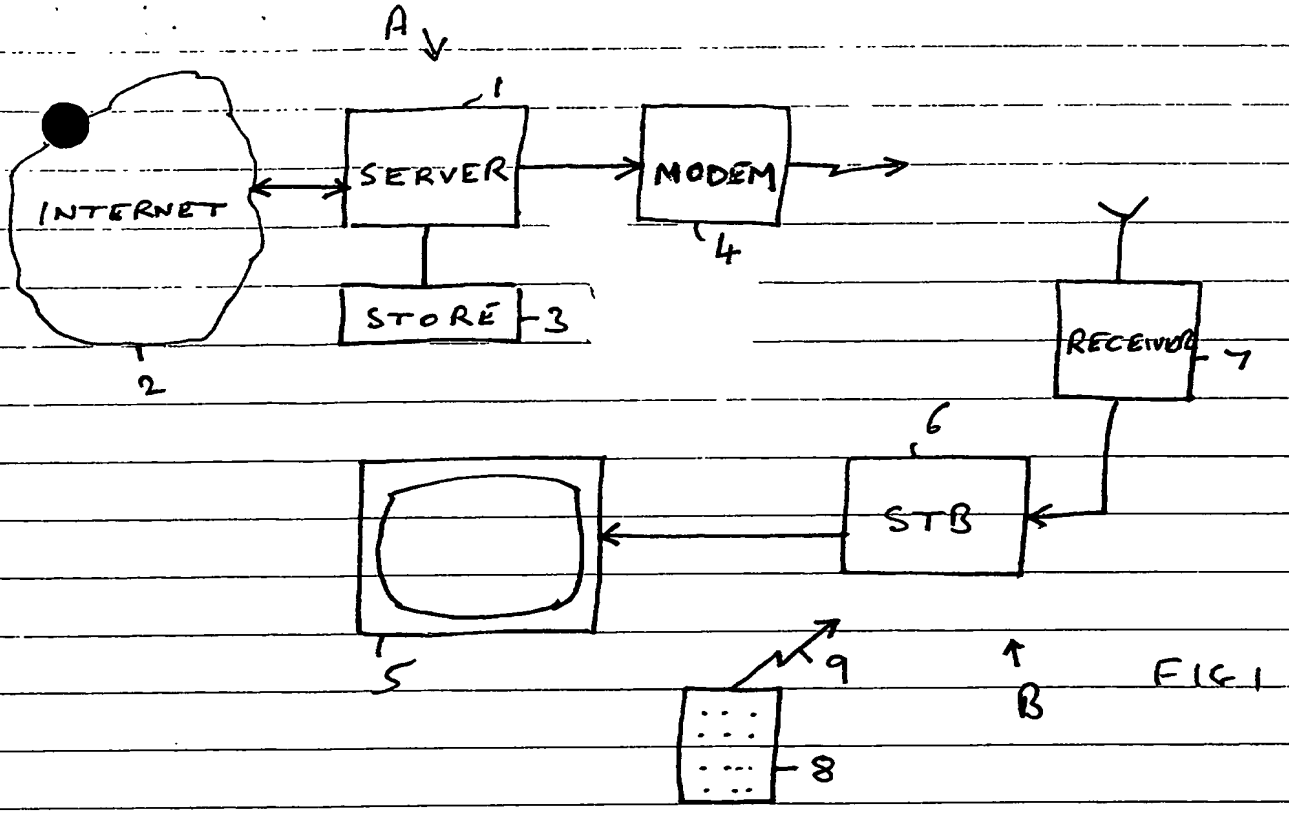
A
INTERNET
SERVER
1
MODEM
4
STORE
3
2
RECEIVER
7
6
STB
5
9
8
B

FIG 1

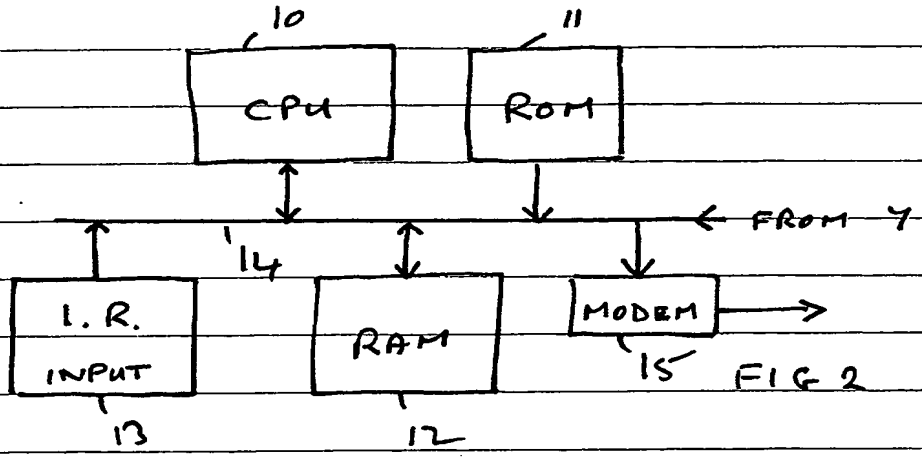
10
CPU
11
ROM
FROM 7
14
I. R.
INPUT
13
RAM
12
MODEM
15

FIG 2